

Summary Report for Grades 3-5

Houghton Mifflin *Math Expressions, Grades 3-5*

Degree of Evidence regarding the Standards for Mathematical Practice:

Limited Evidence

Summary of evidence:

1. **Make sense of problems and persevere in solving them.** Moderate evidence of this practice was found throughout the series. The use of multiple representations and multiple approaches to problem solving was cited as a particular strength of this resource. Open-ended questions were found in many of the lessons, and reviewers found many opportunities for students to explain, analyze, and communicate their thinking. Making connections between concrete models and numerical models is well developed throughout the series. Reviewers found stronger evidence of making sense of problems and procedures in the Grades 4 and 5 materials than in the Grade 3 materials.
2. **Reason abstractly and quantitatively.** There is moderate evidence to support this practice throughout this resource. Reviewers cited evidence for representing scenarios symbolically, and some evidence of students considering reasonableness was found.
3. **Construct viable arguments and critique the reasoning of others.** There is limited evidence to support this practice. Only a few opportunities for students to construct and share viable arguments and critique the reasoning of others were cited. The section called “Math Talk” misses an opportunity to fully develop this practice. This section is not part of the main lesson and does not incorporate justifying and comparing conclusions. This practice was found to be more fully developed in the Grade 4 materials and underdeveloped in the Grade 5 materials.
4. **Model with mathematics.** There was limited evidence found for this practice. Problem solving involving real-world situations and giving answers within a context is evident across the grade span but is more developed in the Grade 4 materials. Reviewers did find some evidence of students using and creating mathematical models in Grades 3 and 4, but that was not cited in the Grade 5 reviews. There is minimal to no evidence of opportunities for students to analyze and draw conclusion or refine and revise results in the Grades 3 and 4 materials. Minimal evidence of this practice was found in the Grade 5 materials.
5. **Use appropriate tools strategically.** There was limited evidence for this practice found in the Grades 3 and 4 materials, and no evidence to support this practice was found in the Grade 5 samples. Some concrete tools are evident in Grades 3 and 4 (pattern blocks, grid paper). The use of technology, students analyzing tools usefulness or limitations, and using tools to explore mathematical concepts is absent or underdeveloped.
6. **Attend to precision.** There is minimal evidence of this practice throughout the series. The Grades 3 and 4 materials provide multiple opportunities for communications, but no examples were cited in the Grade 5 materials. Some evidence for using mathematical vocabulary and modeling precision is evident, but overall this practice is undeveloped.
7. **Look for and make use of structure.** There is limited evidence of this practice throughout the series. There is some use of patterns and structure to connect prior learning but was mostly found in the teacher notes such as, examples of possible models, and suggested generalizations. There is no evidence of students discovering structure or finding generalizations and connections.
8. **Look for and express regularity in repeated reasoning.** There is limited evidence of this

practice in the sampled sections of this series. Reviewers cited some examples of generalizing from patterns, such as generalizing from patterns that were found in multiplication tables. Generally, noticing repetitiveness that leads to short cuts is taught through direct explanations from the teacher.